Claims

1. An electronic system comprising a plurality of fault-monitoring systems each of which is adapted to output a fault signal when an input indicates that the electronic system is in a fault condition associated with the fault-monitoring system, wherein:

the fault-monitoring systems are arranged in a cascade fashion such that a fault signal output from one fault-monitoring system is provided as an input to a subsequent fault-monitoring system in the cascade of fault-monitoring systems to simulate a fault condition associated with the subsequent fault-monitoring system.

2. An electronic system according to claim 1 wherein the output of a final fault-monitoring system in the cascade is used as an indicator of a fault in one of the fault-monitoring systems.

3. An electronic system according to claim 1 or 2, the system further being arranged to:

place the system into a first fault condition and monitor for the generation of a first fault signal from a first fault-monitoring device,

on generation of a first fault signal from the fault-monitoring device after placing the system into a first fault condition, to input the first fault signal to the second fault-monitoring device, and

in response to an output from a final fault-monitoring device to store a record to this effect in non-volatile memory.

4. An electronic system according to claim 3 wherein, on subsequent reversion of the system to a non-fault condition, the system is arranged to check whether the non-volatile memory includes a record and when the non-

volatile memory does not include a record on subsequent reversion, generate an alarm signal.

5 An electronic system according to any of claims 1 to 4 wherein a first fault-monitoring system is adapted to output a fault signal when the electronic system is placed into a switched-off condition.

6. An electronic system according to claim 5 wherein the first fault-monitoring system is a watch-dog system.

7. An electronic system according to claim 5 wherein the electronic system is associated with a vehicle and the electronic system is placed into a switched-off condition by turning an ignition key.

8. An electronic system according to claim 5, 6 or 7 wherein a second fault-monitoring system has as an input the fault signal from the first fault-monitoring system, the second fault-monitoring system being adapted to output a fault signal when the electronic system experiences an under- or over-voltage condition.

9. An electronic system according to any of claims 1 to 8 further comprising storing a record of a fault signal output by any of the fault-monitoring systems to enable identification of a defective fault-monitoring system.

10. A self-test method for an electronic system comprising a plurality of fault-monitoring systems each of which is adapted to output a fault signal when an input indicates that the electronic system is in a fault condition associated with the fault-monitoring system, the fault-monitoring systems being arranged

in a cascade fashion such that a fault signal output from one fault-monitoring system is provided as an input to a subsequent fault-monitoring system in the cascade of fault-monitoring systems, the method comprising:

inputting the fault signal from one fault-monitoring system to a subsequent fault-monitoring system to simulate a fault condition associated with the subsequent fault-monitoring system.

11. A self-test method according to claim 10 wherein the output of a final fault-monitoring system in the cascade is used as an indicator of a fault in one of the fault-monitoring systems.

12. A self-test method according to claim 10 or 11, further comprising:

placing the system into a first fault condition and monitoring for the generation of a first fault signal from a first fault-monitoring device,

on generation of a first fault signal from the fault-monitoring device after placing the system into a first fault condition, inputting the first fault signal to the second fault-monitoring device, and

in response to an output from a final fault-monitoring device storing a record to this effect in non-volatile memory.

13. A self-test method according to claim 12 further comprising, on subsequent reversion of the system to a non-fault condition, checking whether the non-volatile memory includes a record and when the non-volatile memory does not include a record on subsequent reversion, generating an alarm signal.

14 A self-test method according to any of claims 10 to 13 further comprising outputting a fault signal from the first fault-monitoring system when the electronic system is placed into a switched-off condition.

15. A self-test method according to claim 14 wherein the first fault-monitoring system is a watch-dog system.

16. A self-test method according to claim 14 or 15 wherein the electronic system is associated with a vehicle and the electronic system is placed into a switched-off condition by turning an ignition key.

17. An electronic system according to claim 14, 15 or 16 wherein a second fault-monitoring system has as an input the fault signal from the first fault-monitoring system, the second fault-monitoring system being adapted to output a fault signal when the electronic system experiences an under- or over-voltage condition.

18. A self-test method according to any of claims 10 to 17 further comprising storing a record of a fault signal output by any of the fault-monitoring systems to enable identification of a defective fault-monitoring system.

19. An electronic system comprising at least one fault-monitoring system, the system being arranged to:

place the system into a first fault condition and monitor for the generation of a first fault signal from a first fault-monitoring device,

on generation of a first fault signal from the first fault-monitoring device after placing the system into a first fault condition, store a record to this effect in non-volatile memory,

on subsequent reversion of the system to a non-fault condition, check whether the non-volatile memory includes a record of a first fault signal and when the non-volatile memory does not include a record of such a first fault signal on subsequent reversion, generate an alarm signal.

20. An electronic system according to claim 19 wherein:

placing of the system into a first fault condition comprises stopping operation of the processor; and

subsequent reversion of the system to a non-fault condition comprises subsequent commencement of operation of the processor.

21. An electronic system according to claim 19 or 20 wherein the fault monitoring device comprises a voltage detector which generates a fault signal when an over-voltage occurs.

22. An electronic system according to claim 19, 20 or 21 wherein the fault-monitoring device comprises a device for monitoring the operation of the processor and generating a fault signal when a fault with the operation of the processor is detected.

23. An electronic system according to any of claims 19 to 22 further arranged to clear the non-volatile memory of the record once it has been determined whether or not the non-volatile memory includes a record of a fault signal.

24. An electronic system according to any of claims 19 to 23 further comprising a plurality of fault-monitoring systems, a fault signal output of a first fault-monitoring system being provided as an input to a second fault-monitoring system, such that an input to the second fault-monitoring system simulates a second fault condition.

25 An electronic signal according to claim 24 wherein the output of a final fault-monitoring system is used as an indicator of an overall fault in one of the fault-monitoring systems.

26. A self-test method for an electronic system, the method comprising:

placing the system into a first fault condition and monitoring for the generation of a first fault signal from a fault-monitoring device,

on generation of a first fault signal from the fault-monitoring device after placing the system into a first fault condition, storing a record to this effect in non-volatile memory,

on subsequent reversion of the system to a non-fault condition, checking whether the non-volatile memory includes a record of a first fault signal and when the non-volatile memory does not include a record of such a first fault signal on subsequent commencement, generating an alarm signal.

27. A self-test method according to claim 26 wherein the electronic system includes a processor, wherein:

the placing of the system into a first fault condition comprises stopping operation of the processor; and

subsequent reversion of the system to a non-fault condition comprises subsequent commencement of operation of the processor.

28. A self-test method according to claim 26 wherein the electronic system includes a processor, wherein:

the placing of the system into a first fault condition comprises starting operation of the processor; and

subsequent reversion of the system to a non-fault condition comprises subsequent cessation of operation of the processor.

29. A self-test method according to claim 28 wherein the fault-monitoring device comprises a voltage detector which generates a fault signal when an over-voltage occurs.

30. A self-test method according to claim 28 wherein the fault-monitoring device comprises a device for monitoring the operation of a processor and generating a fault signal on detection of a fault with the operation of the processor.

31. A self-test method according to claim 28 further comprising clearing the non-volatile memory of the record once it has been determined whether or not the non-volatile memory includes a record.